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The Thesis Submitted for the Degree of M.Sc (in the field of Genetic Science)

Cloning of *Mycobacterium tuberculosis* Major Secreted Protein Antigen 85B (Ag85B) in *Escherichia coli*

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Abstract

BCG vaccine as a live vaccine in Iran is weak by weakening the virulence of pathogenic microorganisms produced and dropped. But acting antigens to develop immunity to the remains. Continuous culturing mycobacterium bovis BCG vaccine, which has been growing for 13 years in the bile (1921- 1908), prepared. The vaccine's protective effect against tuberculosis, or TB. But the hazards and obstructions such as incidence of tuberculous meningitis vaccine for infants as well as in some vaccines is contraindicated in patients with immune deficiency. Theoretically, any protein-coding genes by recombinant techniques in bacteria, yeast, or mammalian cells, can be used for replication and expression. In this regard, the major protein of 30 kDa, Ag85B of *Mycobacterium tuberculosis* is the TB vaccine candidate was elected as the first. The secretory antigen capable of stimulating an immune response modifiers Hmchnnyn Prevention and INF-γ production in the animal models. The aim of this study was to isolate the gene encoding surface antigen 85B of *Mycobacterium tuberculosis* strains *H37Rv* and cloned the gene encoding surface antigen 85B and transferred to a plasmid without any change in the nucleotide structure of it. Genes responsible for the secretion of this protein was cloned into the plasmid *PCAMBIA* 1305.2. To produce recombinant antigen 85B gene was amplified by PCR and then cloned *fbpB* by the process of the *E.coli* strain *DH5α* was transferred .

Key words : *Mycobacterium tuberculosis* ،Antigen 85B ، Cloning.